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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,700	07/16/2004	Tobias Schneider	071308.1102	5094

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PATENT DEPARTMENT
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EXAMINER	
SAINT CYR, LEONARD	
ART UNIT	PAPER NUMBER
2626	

MAIL DATE	DELIVERY MODE
10/28/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/501,700	SCHNEIDER, TOBIAS	
	Examiner	Art Unit	
	LEONARD SAINT CYR	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08/28/08*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12 - 29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/28/08 has been entered.

Response to Arguments

2. Applicant's arguments filed 08/28/08 have been fully considered but they are not persuasive.

Applicant argues that neither D'hoore nor Riis teach determining phonetic transcripts for each of a plurality of words for N various languages not specified as the mother tongue to obtain N first phoneme sequences for each word corresponding to N first pronunciation variants; determining a phoneme map by mapping the first phoneme sequences of each of said N languages to a relevant phoneme set of the mother tongue (Amendment, pages 8 – 11).

The examiner disagrees, D'hoore et al.., teach that "transcribing the word with rule sets from several languages and generate several phonetic transcriptions. The recognizer uses all the transcriptions in parallel, thus covering all pronunciation variants.

This is particularly useful for recognizing proper names in an application that will be used by a variety of speakers" (col.8, lines 13 – 20). Generating several phonetic transcriptions from several languages implies determining phonetic transcripts for each of a plurality of words for N various languages not specified as the mother tongue to obtain N first phoneme sequences for each word corresponding to N first pronunciation variants; determining a phoneme map by mapping the first phoneme sequences of each of said N languages to a relevant phoneme set of the mother tongue, since those transcriptions are used to determine pronunciation variations among the languages

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 12, 13, 20, 21, 28, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over D'hoore et al., (US Patent 6,085,160) in view of Riis et al., (US PAP 2003/0050779).

As per claims 12, and 22, D'hoore et al., teach a method and apparatus for automated language recognition of words from different languages comprising:

(a) loading a phoneme set associated with a language specified as a mother tongue into a mother tongue language recognizer ("subword units in a first language"; col.2, lines 7 – 14);

(b) determining phonetic transcripts for each of a plurality of words for N various languages not specified as the mother tongue to generate N first phoneme sequences

for each word corresponding to N first pronunciation variants ("generate several phonetic transcriptions"; col.8, lines 13 – 15);

(c) determining a phoneme map by mapping the generated first phoneme sequences of each of said N languages to a relevant phoneme set of the mother tongue ("uses all the transcriptions in parallel…for recognizing proper names in an application that will be used by a variety of speakers whose language is not known"; col.8, lines 13 – 19).

However, D'hoore et al., do not specifically teach determining N second phoneme sequences corresponding to N second pronunciation variants from said phoneme map for each word; and processing said N second phoneme sequences with the phoneme set associated with the language specified as the mother tongue to identify at least one of a matching word and a similar word.

Riis et al., teach capturing both inter- and intra-language pronunciation variations which is ideal for multilingual speaker independent speech recognition systems; generating pronunciations in response to said sequences of multilingual phoneme symbols, and comparing said pronunciations with the acoustic input in order to find a match (Abstract, lines 7 – 10; paragraph 15, lines 8 – 11).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to generate inter- and intra-language pronunciation variations as taught by Riis et al., in D'hoore et al., because that would held better identify the language of the inputted word, by finding the best match among pronunciations of different languages.

As per claim 13, D'hoore further disclose adding the N second phoneme sequences for each word in a language recognition vocabulary located in the mother tongue language recognizer ("subword units in a first language"; col.2, lines 7 – 14; col.1, lines 3 - 7).

As per claims 20, 21, 28, and 29, Riis et al., further disclose determining the phonetic transcripts of each word for N various languages not specified as the mother tongue is performed by at least one neural network; processing said N second phoneme sequences with the phoneme set associated with the language specified as a mother tongue is performed using a Hidden Markov Model (paragraph 53, lines 1 – 3).

5. Claims 14 – 16, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over D'hoore et al., (US Patent 6,085,160) in view of Riis et al., (US PAP 2003/0050779), and further in view of Bub et al., (US Patent 6,460,017).

As per claims 14, and 23, D'hoore et al., in view of Riis et al., do not specifically teach determining distances to the N second pronunciation variants based at least on the processed N second phoneme sequences

Bub et al., teach measuring the distance or determining the similarity of two phonemes models of the same sound from different languages (col.11, lines 45 – 48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to measure the distance between phonemes as taught by

Bub et al., in D'hoore et al., in view of Riis et al., because that would held better identify the language of the inputted word.

As per claim 15, Riis et al., further disclose classifying each N second phoneme sequences ("inter- and intra-language pronunciation variations"; Abstract, lines 7 – 10).

However, D'hoore et al., in view of Riis et al., do not specifically teach identifying respective distances.

Bub et al., teach measuring the distance or determining the similarity of two phonemes models of the same sound from different languages (col.11, lines 45 – 48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to measure the distance between phonemes as taught by Bub et al., in D'hoore et al., in view of Riis et al., because that would held better identify the language of the inputted word.

As per claim 16, Bub et al., further disclose eliminating any N second phoneme sequences that do not meet or exceed a predetermined threshold ("distance threshold"; col.12, lines 51, and 52).

6. Claims 17, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over D'hoore et al., (US Patent 6,085,160) in view of Riis et al., (US PAP 2003/0050779), further in view of Bub et al., (US Patent 6,460,017), and further in view of Brill et al., (US Patent 7,047,493).

As per claims 17, 24, D'hoore et al., in view of Riis et al., and further in view of Bub et al., do not specifically teach that the distances are Levenshtein distances.

Brill et al., teach using Levenshtein distance (col.3, line 31).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Levenshtein distance as taught by Brill et al., in D'hoore et al., in view of Riis et al., and further in view of Bub et al., because that would held better identify the language of the inputted word.

As per claim 25, Bub et al., further disclose eliminating any N second phoneme sequences that do not meet or exceed a predetermined threshold ("distance threshold"; col.12, lines 51, and 52).

7. Claims 18, 19, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over D'hoore et al., (US Patent 6,085,160) in view of Riis et al., (US PAP 2003/0050779), and further in view of Harengel et al., (US PAP 2004/0039570).

As per claims 18, 19, 26, and 27, D'hoore et al., in view of Riis et al., do not specifically teach determining the probabilities that each word for N various languages not specified as the mother tongue belong to a specified set of languages, said step of determining probabilities occurring before step (a); and eliminating languages from said specified set that do not exceed a predetermined threshold.

Harengel et al., teach if the probability coefficient for the assignment of a word to at least one language exceeds the threshold value, the grapheme-phoneme assignment

which corresponds to the respective word is supplemented in the pronunciation lexicon (paragraph 10, lines 8 – 13).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine a probability coefficient of a word as taught by Harengel et al., in D'hoore et al., in view of Riis et al., because that would held better identify the language of the inputted word, by discarding languages with low probability coefficient value.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEONARD SAINT CYR whose telephone number is (571) 272-4247. The examiner can normally be reached on Mon- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LS
10/24/08

/Richemond Dorvil/

Supervisory Patent Examiner, Art Unit 2626